Draft Sensor Check

For all Monitoring, Ullage, & TDS profiles, the Contracting Officer's Representative (COR) will periodically verify the accuracy of the draft sensors, forward and aft by comparing the observed scow hull draft marks to the corresponding sensor readings from the DQM data. The COR will review the difference between instrument and manually-measured averaged drafts to insure that the system is operating within acceptable accuracy (+/- 0.1 ft. in calm seas conditions), directing the contractor to re-calibrate or repair system components as necessary.

Purpose: To verify accuracy of draft sensors forward and aft

Material Required:

1) SCIF spreadsheet
2) Auxiliary vessel to observe hull draft marks
3) Radio communication between the vessels
4) A second person to read the draft marks from the auxiliary vessel

During the check, the scow should lie in relatively clam seas to minimize wave induced measurement error

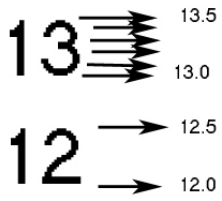
Procedure:

One person boards the auxiliary vessel and circles the scow to observe and record draft markings forward and aft (both port and starboard). The second person on the scow records the system measured draft values. The values are entered into the spread sheet and the difference between instrument and manually-measured drafts are calculated. This difference should be within +/-0.1 foot under ideal sea conditions. As wave heights increase measurement error increases; record remarks accordingly. This check should be made both when the scow is light and loaded to verify accuracy throughout the working range of the draft sensor. If either if outside of what is deemed acceptable by the inspector for the given conditions, then the sensors should be calibrated by the contractor.

A draft mark is read by interpreting where the water crosses the draft mark. The width of the font of a draft mark is equal to a tenth of a foot with the bottom of the number equal to zero and the top equal to 0.5. The blank space between the two numbers is also 0.5 for a total of 1 foot of change from the

bottom of one number up to the bottom of the next. In the figure below, the arrow above 13.0 would be 13.1 and continue incrementing by .1 until 13.5.

Figure 1. Draft mark interpolation.



Draft Re-Test					Version 2.0
Light Drafts					
	Manually Measured			DMQ Drafts	
	Port	Stbd	Average (ft	nstruments	Difference (ft)
Fwd			0		0
Aft			0		0
Loaded Drafts					
	Manually Measured			DMQ Drafts	
	Port	Stbd	Average (ft	nstruments	Difference (ft)
Fwd			0		0
Aft			0		0